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CAPE ROMANZOF DISTRICT COMMERCIAL HERRING FISHERY

SEASON SUMMARY, 1990

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1990 Cape Romanzof District Pacific Herring Fishery Summary
Alaska Department of Fish and Game
Commercial Fisheries Division

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Commercial Fishery 1990

The Pacific herring commercial fishing season consisted of one period which was established by emergency order during May 23-24 for a total fishing time of 3 hours (Table 1). A total of 329 short tons (st) of herring were harvested by 95 fishermen utilizing 90 fishing vessels (Table 2).

Approximately 318.2 st were purchased as sac roe and 10.8 st were purchased as bait herring. The average sac roe recovery was 8.4%. Wastage was not a problem during the 1990 season.

Estimated value of the total harvest to the fishermen was $154,940.00. Average price for Pacific herring sac roe was $566 st at 10% roe recovery, plus or minus $49.00 a percentage point. Four companies purchased herring in the Cape Romanzof District this season (Table 3). These companies were represented by two processing vessels and six tenders which were present on the Cape Romanzof herring grounds during the fishery.

A total of 95 fishermen participated in the fishery. This was the lowest effort recorded since 1985, and was 17.4% below the 1989 effort level. As of June 11, there were a total of 132 renewed permits for the Cape Romanzof District; 120 Alaskan residents, 8 non-residents, and 4 of unknown residency status. Actual fishing effort by residency status was as follows: 72 (75.8%) were local Alaskan residents (residents of Chevak, Hooper Bay, and Scammon Bay); 21 (22.1%) were non-local Alaskan residents; and 2 (2.1%) were non-resident. Catch by residency status was: 252.5 st at 8.3% roe average by local Alaskan residents (76.7% of catch); 68.4 st at 8.0% roe average by non-local Alaskan residents (20.7% of catch); and 8.1 st at 9.9% roe average (2.5% of catch) (Table 2).

The overall exploitation rate of Pacific herring could not be calculated due to the lack of a biomass estimate. For this reason, the commercial harvest was managed to achieve the preseason guideline harvest.

Seven Fish and Wildlife Protection (FWP) officers were present on the Cape Romanzof fishing ground during the 1990 commercial herring fishing season. These officers were supported by the Protection vessel (P/V) WOLSTAD, two skiffs, two fixed wing aircraft and one helicopter. A total of five commercial fishing citations were issued. All commercial fishing citations were issued for fishing during a closed period. Two deliveries totaling 4,466 pounds (2.2

st) of Pacific herring were confiscated.

In coordination with the Department, commercial fishermen provided catch samples for evaluation by industry representatives prior to the commercial opening (Table 4). This was the second season in which commercial fishery test samples were used extensively for management purposes. This process provided an excellent public forum, the success of which relied heavily on the collection of samples by fishermen, and on evaluation of roe samples by industry roe technicians.

Roe recovery information indicated the presence of immature fish during the first "beach party" on May 22. Two "beach parties" were held on May 23 in an attempt to sample each incoming tide. With spawned-out fish present in the samples from the first incoming tide of May 23, it was the consensus of the ADF&G management staff as well as the local fishermen that the fishery was imminent. At this time, the commercial fleet was put on one hour notice, and a second sample time was scheduled for 9:30 p.m. on May 23. This time was selected to get samples to the beach for industry analysis, and still allow enough time to provide a one hour notice prior to opening the fishery. In addition, at preseason meetings, local fishermen expressed the desire for the Department to schedule the commercial fishing periods to occur during incoming tides. Overall roe percentages of the samples analyzed were mixed due to the varying proportions of males to females, the presence of immature fish, and the presence of spawned out fish.

In retrospect, the sample collected during the incoming tide the evening of May 23 may not have been representative of the fish available to the commercial fleet during the opening of May 23-24 since it was collected early in the tidal stage.

Subsistence Fishery 1990

Subsistence herring survey questionnaires were mailed to fishing families in the communities of Hooper Bay, Chevak, and Scammon Bay. During 1990, a total of 208 subsistence herring questionnaires were sent out. Forty-two questionnaires have been returned thus far. A total of approximately 8.9 s.t. was reported as having been harvested by 31 fishing families.

The subsistence questionnaire also asked how the amount of herring returning to their area this year compared with last year. The majority of people who responded to this question replied that there was more herring in 1990 than in 1989.

Historic catch and effort information should be considered minimum since not all fishing families are contacted nor return completed questionnaires (Table 5).

Herring Abundance

Five aerial surveys were flown during the 1990 season on May 12, 23, 26, 27, and on June 1. One survey was conducted utilizing a C185 provided by Fish and Wildlife Protection. All surveys flown during May were unacceptable due to poor weather and/or turbid water conditions. A survey flown on June 1 under poor conditions did not observe any herring. Aerial survey efforts were hampered primarily by poor weather and turbid water conditions. However, the difficult logistics of getting a chartered aircraft (from St. Marys or Bethel) prevented surveys from being flown on two days in May when a break in the weather may have allowed fish to be observed.

Test fishing was conducted from May 17 to June 6, 1990. A total of 2,220 Pacific herring were caught, of which 1,122 were sampled for biological data. Pacific herring comprised approximately 69% of the total catch of schooling species. Other fish captured during test fishing, primarily during the later portion of the project, were yellowfin sole, flounder, saffron cod, sculpin, and whitefish.

A total of 308 Pacific herring were sampled from the commercial harvest. Samples were collected from 2 1/2", 2 3/4", and 3" mesh gill nets. The estimated age composition of the commercial samples collected based on scale analysis was: Age 5: <1%; Age 6: 9.8%; Age 7: 11.8%; Age 8: 20.6%; and Age 9+: 56.9%.

Based on preliminary age composition data from the variable mesh test gill net samples, the 1990 spawning biomass was comprised of 39.5% age 9 and older herring. Age 5, 6, and 7 Pacific herring accounted for 3.75, 24.6%, and 11.9% of the biomass, respectively. Newly recruited age 3 and 4 Pacific herring represented less than 1% and 4.8% of the 1990 spawning biomass.

It was not possible to achieve a Pacific herring spawning biomass estimate based on aerial surveys. The preseason projected biomass, based on limited data, was 2,410 short tons. The guideline harvest was based on a 15% exploitation of this expected return, or 360 st.

Spawn Deposition

Daily spawn deposition surveys in the Kokechik Bay area of the Cape Romanzof District began on May 15. On May 19, the first observations were recorded. This initial spawn deposition was considered to be quite extensive and thick for a first spawn, and averaged 2 egg layers over the area where spawning occurred on Fucus substrate. After May 19, the average egg layer dropped due to wave action, which caused considerable egg loss. Predictably, a gradual increase in spawn deposition followed, both in layers of eggs and distribution. Spawn deposition peaked on May 29, with an average of 3.9 layers estimated on Fucus substrate on May 30. A

steady decline of spawn deposition occurred subsequently; the last survey was conducted on June 6.

Comments

Although there was no way to quantify the spawning biomass which returned to Cape Romanzof in 1990, it appeared to Department personnel who have conducted daily qualitative spawn deposition surveys for the past 4-6 seasons that spawn deposition was greater than average. Given the difficulty of aerial surveys, and a regulatory threshold of only 1,500 st established for the Cape Romanzof, the Department should attempt to develop alternative methods to estimate the spawning biomass in this district. Without assistance in this problem, or obtaining new information, it is possible that the projected 1991 biomass return may fall below this threshold.

Local fishermen from Chevak, Scammon Bay, and Hooper Bay expressed a great deal of concern during the 1990 season regarding the lack of a biomass estimate. The fishery has declined (apparently) to a level where it will not be feasible for fishermen to capitalize further in the fishery, or even to "break even". The relatively small value of this fishery has impacted the fleet already in that many cannot afford to upgrade gear (larger mesh sizes, etc.) to optimize the value of the allowable catch. Unless the Department can implement the studies necessary to estimate biomass, it will be very difficult to manage a commercial fishery in the Cape Romanzof District.

Recommendations to begin pursuing this problem may include the following:

1) Catch at age analysis information.
2) Increased aerial surveillance made possible by a dedicated aircraft, requiring a considerably larger charter budget allocation.
3) A renewed effort to utilize spawn deposition data as a means to establish a biomass index.

Table 1. Commercial herring catch and effort data, Cape Romanzof District, 1990.

Date	Time of Fishery	Hours Fished	Number			Period Catch (st)			
			Fishermen	Vessels	Landings	Bait	Sac Roe	Total	Roe %
May 23-24	2230-0130	3	95	90	158	10.8	318.2	329.0	8.40
Total		3	95	90	158	10.8	318.2	329.0	8.40

Table 2. Commercial herring fishing data, Cape Romanzof District, 1980-1990.

	1980	1981	1982	1983 a	1984	1985	1986	1987	1988	1989	1990
Catch (st)	611	720	657	816	1,185	1,299	1,865	1,342	1,119	926	329
Hours Fished	326	120	180	144	90	60	42	8	11	13	3
Percent Roe Recovery	9.8	8.0	9.3	9.0	8.6	8.3	9.2	8.9	9.1	9.3	8.4
Estimated Value ($ millions)	0.13	0.21	0.22	0.37	0.31	0.55	1.14	1.00	1.02	0.49	0.15
Number of Buyers	2	4	2	3	3	2	5	9	6	6	4
Number of Fishermen	69	111	75	63	66	73	97	157	113	115	95
Number of Boats	54	82	50	57	59	69	90	152	108	110	90
% Effort by Local Fishermen	70	81	85	92	98.5	91	84	53	63	87	76
% Harvest by Local Fishermen	40	60	84	88	99.8	94	70	33	60	82	77
Biomass Estimate b	3,000	4,900	4,900	5,500	6,100	7,000	7,500	7,200	6,600	4,400	2,410 c
Exploitation Rate	20.4	14.7	13.4	14.8	19.4	18.6	24.9	18.6	17.0	21.0	13.6

a Exclusive Use Regulation into effect.

b Biomass estimates from 1980 to 1986 were qualitative estimates of herring abundance to describe abundance trends. Biomass estimate for 1987 was by aerial survey.

c Biomass estimate not possible in 1990; this figure represents projected 1990 return.

Table 3. Pacific herring processors and associated data, Cape Romanzof District, 1990.

Company	Representative(s)	Processing/Tendering Vessels
Icicle Seafoods	Steve Hanson	M/V Chicagof
Lafayette Fisheries	John Garner	P/V Lafayette M/V Chatham
Pan Pacific Seafoods	Leo Holthe	P/V Pacific Producer M/V Pavlof M/V Northpoint M/V Pacific Packer
Woodbine Alaska Fish Co.	John LaMay	M/V Response

Table 4. Test sample data, collected by commercial fishermen, Cape Romanzof District, 1990.

Date	Mesh Size (inches)	Sample Size	% Females	% Roe Recovery		Comments
				Mature	Immature	
May 22	2 1/2	10 Kg	33	5.7	1.7	From 1/2 mi. north of ADF&G camp
p.m.	3	10 Kg	54	6.6	5.5	From 1/2 mi. north of ADF&G camp
	3	5.8 Kg	57	13.8	0.0	From just off ADF&G camp
	3 1/8	10 Kg	38	8.7	0.0	From at Cape Romanzof
May 23	2 7/8	10 Kg	37	6.5	0.7	From off "Point" near SCB camp
noon	2 7/8	10 Kg	68	13.1	1.9	From between "Point" and ADF&G camp; 2 sp/o
	2 7/8	10 Kg	46	12.0	0.0	From just off ADF&G camp
	3	10 Kg	38	7.3	0.0	From just south of ADF&G camp; 1 sp/o
	3	10 Kg	58	12.0	0.8	From just south of ADF&G camp; 1 sp/o
	3	40 Kg	60	12.1	0.2	Combined samples from "Point" to ADF&G camp
May 23	2 3/4	10 Kg	35	7.2	0.7	From just off camp by Cape Romanzof
p.m.	2 3/4	10 Kg	48	9.1	1.3	From just off point north of ADF&G camp; 1 sp/o
	3	10 Kg	74	16.6	0.6	From just south of ADF&G camp
	3	10 Kg	54	11.1	2.1	Location uncertain
	3	10 Kg	73	14.6	1.9	Location uncertain
	3	10 Kg	65	11.6	2.5	Location uncertain

Table 5. Subsistence herring harvest (st) and effort data, Cape Romanzof, 1975-1990. a

Year	Scammon Bay	Chevak	Hooper Bay	Total	Number of Fishing Families
1975	-	-	3	3	34
1976	1	1	3	5	41
1977	-	<1	2	<3	30
1978	1	-	4	5	29
1979	6	2	3	11	84
1980	3	4	4	11	61
1981	8	2	4	14	46
1982	4	2	5	11	43
1983	3	1	5	9	37
1984	4	3	4	11	47
1985	2	2	4	8	44
1986	2	1	4	7	41
1987	1	1	1	3	39
1988	2	2	3	7	30
1989	1	<1	1	<3	19
1990	<2	<1	6	9	31

a Subsistence survey results are believed to accurately reflect harvest trends; however, reported catches reflect minimum figures since all fishermen cannot be contacted.